

The Venetian Giacinto Namias and the explanation of how the voice works. An example of scientific dissemination in the field of Italian medicine in the second half of the nineteenth century

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Abstract. The letter aims to highlight the contribution of a Venetian physician, Giacinto Namias, to the knowledge of the mechanisms of the voice in the second half of the 19th century.

Key words: voice, artificial larynx, Giacinto Namias, Venice

In the eighteenth century, and during the first half of the nineteenth century, numerous observations were dedicated to understanding the functioning mechanism of the larynx and the voice. Experiments were made with animal or cadaver larynxes and artificial models were built to simulate mechanically the sounds of the voice for educational purposes - such as those of Antoine Ferrier (1693-1769) and Johannes Peter Müller (1801-1858) (1, 2). Soon the need to know the physiological mechanism of voice and speech, as well as many other aspects of Science and Technology, left the university classrooms and was not the exclusive prerogative of scientists and insiders but was a requirement of wider layers of the population under the influence of Positivism (3).

On May 31, 1867, Giacinto Namias (1810-1874), illustrious hospital chief in Venice, held a popular conference dedicated to the voice at the *Ateneo Veneto*. The conference was later transcribed and published in the popular series *La Scienza del Popolo* with the title *La voce ed altri fenomeni attinenti alla respirazione* [in English: *The voice and other phenomena related to breathing*, Authors' note] (Firenze, Editori della Scienza del Popolo, 1867). A topic as fascinating as it is difficult to explain, in a simple way, to a large audience but which Namias masterfully managed to tell.

In fact, his intention was to “*expose in a plain and popular way some knowledge concerning the life and health of man, also useful to those who do not deal with medicine*”. He therefore described the anatomy of the organs of phonation and their mechanism, also through the use of rubber models: “... *I place before you this tube of elastic rubber, intersected by many rings superimposed on each other...*”. He paid attention to the description of the voice, its production and its value for social life: “*a much more frequent phenomenon, the one that more than any other puts man in communication with other men and leads them to the highest wonders of civilization, is the voice*”. The conference of the Venetian doctor was mainly focused on the voice, and also briefly described it from a physical point of view. He proposed an artificial anatomical model of the larynx, the “*generating*” organ of the voice: “*Here there is, gentlemen, an artificial larynx, that I have built for you, which ends with two plates of elastic rubber. Blowing against them through the two tubes that represent the bronchi, you hear no sound, but now by pressing the two springs that are joined to them, I stretch the plates and narrow their opening, and you hear a sound, the more acute the narrower the one and the more taut these are*”. Namias ended the discussion with a description of the changes of the voice through life, also defining the larynx “*an inimitable instrument*

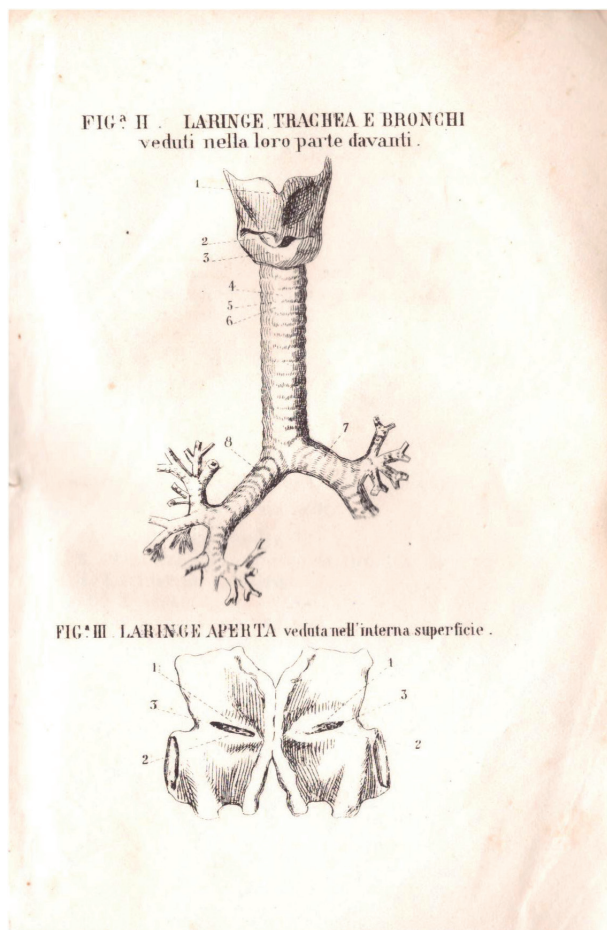


Figure 1. Plate with larynx, trachea and bronchi taken from the work of Giacinto Namias *La voce ed altri fenomeni attinenti alla respirazione*, Firenze 1867 [A. Cozza' Private Collection].

for the simplicity of its talents and for the variety of its effects" (figure 1).

A few years later, the artificial larynx used at first purely for educational purposes, became a real medical aid. In 1873 Theodor Billroth (1829-1894) successfully performed the first laryngectomy (4, 5). In the following years, many other surgeons performed the same

operation. Among the Italians were Enrico Bottini (1835-1903) who was the first to carry it out in Italy in 1875, Azzio Caselli (1847-1898), Giacomo Filippo Novaro (1843-1934) and Francesco Durante (1844-1934) (4, 6). Billroth's assistant, Carl Gussenbauer (1842-1903) in 1874 also proposed the first artificial larynx (4, 5) effectively realizing an aspiration of medical science.

Within a few years, in fact, we went from understanding the functioning of such a particular organ, the larynx, to the first practical applications of the acquired knowledge in the clinical-therapeutic field.

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